In the claims:

1.(currently amended)A fluid mixing valve for producing a mixed fluid stream from first and second fluid streams having different, varying temperatures~~,~~ and ~~having different, varying~~ pressures, said mixed fluid stream having a substantially stable, preselected temperature of a magnitude between the temperatures of said first and second fluid streams, said fluid mixing valve ~~including~~ utilizing substantially the full flow of fluid in the relatively short and wide control channels, said mixing valve comprising:

a) a housing ~~which includes~~ comprising:

i) a first fluid inlet for admitting said first fluid stream~~,~~ ;

ii)a second fluid inlet for admitting said second fluid stream~~,~~; and

iii) a first fluid outlet for a resulting said mixed fluid stream; and

b) a mixing regulation assembly movably disposed within said housing, ~~which includes~~ comprising:

i) a mixing element having spaced apart third and fourth fluid inlets, and a second fluid outlet arranged in fluid flow communication with said third and fourth fluid inlets, said third and fourth fluid inlets being arranged so as to permit the flow therethrough of said first and second fluid streams so as to facilitate mixing thereof into said mixed fluid stream, said second fluid outlet being arranged so as to facilitate outflow therethrough of said mixed fluid stream,

ii) a ~~stream~~ flow divider, arranged in fluid flow

ii) a ~~stream~~ flow divider, arranged in fluid flow communication with said second fluid outlet, operative to divide said mixed stream into two component streams each having rates of flow and pressures which are substantially equal to those of the other;

iii) at least one flow controlling mechanism for increasing the flow of one of said two component streams and decreasing the flow of the other of said two component streams in concert, so as to induce a pressure differential between said two component streams;

iv) at least one thermally responsive element arranged to be in fluid flow and in heat transfer communication with at least one of said two component streams and operative, to control said at least one flow controlling mechanism in response to a difference between the temperature of said two component streams and said preselected temperature~~,~~; and

v) a recombination and discharge means for recombining said two component steams into said mixed fluid stream for output from said fluid mixing valve via said first fluid outlet;

wherein, in response to a difference between the temperature of said two component streams and said preselected temperature resulting from a change in temperature or pressure of at least one of said first and second fluid streams, said mixing regulation assembly is operative in response to the induced pressure differential between said two component fluid streams, to adjust the relative flows of said first and second fluid streams so as to counterbalance the difference between the ~~temperature~~ temperatures of said two component streams and said

preselected temperature, thereby substantially restoring said mixed fluid stream to said preselected temperature.

2.(original) The fluid mixing valve in accordance with claim 1, wherein said first and second fluid inlets respectively include first and second inlet valves which are mechanically linked so as to control the relative inlet flows of said first and second fluid streams.

3.(original) The fluid mixing valve in accordance with claim 2, wherein said first and second inlet valves substantially increase the flow through one of said first and second fluid inlets while simultaneously decreasing the flow through the other of said first and second fluid inlets in response to said mixing element.

4.(original) The fluid mixing valve in accordance with claim 1, wherein said first fluid outlet includes an outlet flow regulator valve for controlling the rate of flow through said fluid mixing valve.

5.(original) The fluid mixing valve in accordance with claim 1, wherein said housing includes at least one housing element and at least one closure element for facilitating disposition of said mixing regulation assembly therein.

6.(original) The fluid mixing valve in accordance with claim 1, wherein said housing includes a temperature adjusting mechanism for altering said preselected temperature of said mixed fluid stream, said temperature adjusting mechanism including at least one pressure

differential inducing mechanism for changing the relative rates of flow of said two component fluid streams therebetween, wherein said at least one pressure differential inducing mechanism is selected from the group of: a double-acting valve; a displacement mechanism; and a position-changing mechanism for changing the position of said thermally responsive element.

7.(original) The fluid mixing valve in accordance with claim 6, wherein said temperature adjusting mechanism is configured to provide an equilibrium configuration of said mixing regulation assembly associated with an altered said preselected temperature.

8.(original) The fluid mixing valve in accordance with claim 1, wherein said mixing regulation assembly is configured within said housing as a working element operative in response to said pressure differential between said two component fluid streams and provided with a separator to substantially prevent fluid leakage between said two component streams past said working element, said separator selected from one of the group of: a diaphragm having at least one flexible membrane; a piston having at least one circumferential fluid seal; and a vane rotationally operative having a peripheral seal.

9.(original) The fluid mixing valve in accordance with claim 1, wherein said mixing regulation assembly operative to adjust the relative flows of said first and second fluid streams is selected from the group of: a rotationally operative planar disc; a rotationally operative ball; a

displaceably operative planar slide; and a displaceably operative spool pipe assembly.

10.(currently amended) The fluid mixing valve in accordance with claim 1, wherein said mixing regulation assembly further comprises at least one space-saving ~~element~~ ring located in the internal volume of the spool on at least one side of a bimetal disk.

11.(currently amended)The fluid mixing valve in accordance with claim 1, wherein said ~~stream~~ flow divider is selected from the group of: fixed orifices; adjustable orifices; and vane wheels disposed on a common axis.

12.(original) The fluid mixing valve in accordance with claim 1, wherein a relative portion of said mixed fluid is discharged through a spring-loaded bypass before entering said flow divider thereby allowing high fluid flow rates of mixed fluid through said mixing valve.

13.(original) The fluid mixing valve in accordance with claim 1, wherein said at least one thermally responsive element is selected from one of the groups of: bimetal elements; thermally expandable elements; wax-operated thermostats; and fluid-operable elements.

14.(original) The fluid mixing valve in accordance with claim 13 wherein said bimetal elements are configured as one of the elements selected from the group: disc, coil and rod.

15.(original) The fluid mixing valve in accordance with claim 1, wherein said at least one flow controlling mechanism includes a double-acting valve device for altering said preselected temperature of said mixed fluid stream.

16.(original) The fluid mixing valve in accordance with claim 1, wherein said recombination and discharge means is disposed in said housing external to said mixing regulation assembly.

17.(currently amended) The fluid mixing valve in accordance with claim 1, wherein said recombination and discharge means ~~and~~ includes a double-acting valve for changing the relative rates of flow of said two component fluid streams so as to induce a pressure differential ~~between~~ therebetween ~~said two component streams~~, thereby altering said preselected temperature.

18.(original)A method for producing a mixed fluid stream from first and second inlet fluid streams having different, varying temperatures, and having different, varying pressures, said mixed fluid stream having a substantially stable, preselected temperature of a magnitude between the temperature of said first and second inlet fluid streams, said method including the steps of:

a) combining said first and second inlet fluid streams so as to produce said mixed fluid stream;

b) dividing said mixed fluid stream into two component streams having respective rates of flow and pressures which are substantially equal;

c) sensing a difference between the temperature of said two component streams and said preselected temperature;

d) unbalancing the substantially equal rates of flow of said two component streams, such that the rate of flow of one of said two component streams is increased and the rate of flow of the other of said two component streams is decreased in accordance with the sensed difference between the temperature of said two component streams and said preselected temperature, thereby inducing a pressure differential between said two component streams;

e) adjusting the relative rates of flow of said first and second inlet fluid streams in relation to said induced pressure differential between said two component streams, such that the flow of one of said first and second inlet fluid streams is increased and the flow of the other of said first and second inlet fluid streams is decreased in relation to said induced pressure differential between said two component streams, thereby restoring the temperature of said two component streams substantially to said preselected fluid temperature; and

f) recombining said two component streams to produce a combined outlet stream.

19.(original) The method in accordance with claim 18, wherein said step b) of dividing said mixed fluid stream into two component streams utilizes a volumetric flow divider.

20.(original) The method in accordance with claim 18, wherein after the step a) of combining said first and second inlet fluid streams so as to produce said mixed

fluid stream there is a step of direct discharge of a relative portion of said mixed fluid stream to an outlet stream.

21.(original)The method in accordance with claim 18, wherein said step c) of sensing a difference between the temperature of said two component streams and said preselected temperature includes utilizing a thermally responsive device.

22.(original) The method in accordance with claim 18, further including, before said step c) of sensing, a step of altering said preselected temperature.

23.(original) The method in accordance with claim 18, wherein said step d) of unbalancing the substantially equal rates of flow of said two component streams includes inducing said pressure differential between said two component streams thereby altering said preselected temperature of said mixed fluid stream.

24.(original) The method in accordance with claim 18, wherein said step e) of adjusting the relative rates of flow of said first and second inlet fluid streams includes substantially terminating the flow of one of said first and second inlet fluid streams if the flow of the other of said first and second inlet fluid streams is substantially terminated.

25.(original) The method in accordance with claim 18,

wherein said step f) of recombining said two component streams includes adjusting the relative rates of flow of said two component streams so as to induce said pressure differential between said two component streams thereby altering said preselected temperature of said mixed fluid stream.

26. (original) The method in accordance with claim 18, further comprising reversing step b) dividing said mixed fluid stream into two component streams and step d) unbalancing the substantially equal rates of flow of said two component streams.

27-28(cancelled)

29.(new) A fluid mixing valve for producing a mixed fluid stream from first and second fluid streams having different, varying temperatures and pressures, said mixed fluid stream having a substantially stable, preselected temperature of a magnitude between the temperatures of said first and second fluid streams, said fluid mixing valve utilizing substantially the full flow of fluid in relatively short and wide control channels, said mixing valve comprising:

a) a housing comprising:

i) a first fluid inlet for admitting said first fluid stream;

ii) a second fluid inlet for admitting said second fluid stream; and

iii) a first fluid outlet for a resulting said mixed fluid stream; and

b) a mixing regulation assembly, displaceably disposed within said housing, comprising:

i) a mixing element having spaced apart third and fourth fluid inlets, and a second fluid outlet arranged in fluid flow communication with said third and fourth fluid inlets, said third and fourth fluid inlets being arranged so as to permit the flow therethrough of said first and second fluid streams so as to facilitate mixing thereof into said mixed fluid stream, said second fluid outlet being arranged so as to facilitate outflow therethrough of said mixed fluid stream,

wherein said housing includes a temperature adjusting mechanism for altering said preselected temperature of said mixed fluid stream, said temperature adjusting mechanism including at least one pressure differential inducing mechanism for changing the relative rates of flow of said two component fluid streams therebetween, and

wherein said temperature adjusting mechanism is configured to provide an equilibrium configuration of said mixing regulation assembly associated with an altered said preselected temperature; and

wherein said at least one pressure differential inducing mechanism is selected from the group of: a double-acting valve; a displacement mechanism; and a position-changing mechanism for changing the position of said thermally responsive element; and

ii) a flow divider, arranged in fluid flow communication with said second fluid outlet, operative to divide said mixed stream into two component streams each having rates of flow and pressures which are substantially equal to those of the other,

wherein said flow divider is selected from the group of: fixed orifices; adjustable orifices; and vane wheels disposed on a common axis;

iii) at least one flow controlling mechanism for increasing the flow of one of said two component streams and decreasing the flow of the other of said two component streams in concert, so as to induce a pressure differential between said two component streams;

iv) at least one thermally responsive element arranged to be in fluid flow and in heat transfer communication with at least one of said two component streams and operative, to control said at least one flow controlling mechanism in response to a difference between the temperatures of said two component streams and said preselected temperature; and

v) a recombination and discharge means for combining said two component steams into said mixed fluid stream for output from said fluid mixing valve via said first fluid outlet;

wherein, in response to a difference between the temperatures of said two component streams and said preselected temperature resulting from a change in temperature or pressure of at least one of said first and second fluid streams, said mixing regulation assembly is operative in response to the induced pressure differential between said two component fluid streams to adjust the relative flows of said first and second fluid streams so as to counterbalance the difference between the temperatures of said two component streams and said preselected temperature, thereby substantially restoring said mixed fluid stream to said preselected temperature, and

wherein a relative portion of said mixed fluid is discharged through a spring-loaded bypass before entering said flow divider thereby allowing high fluid flow rates of mixed fluid through said mixing valve.